Figures

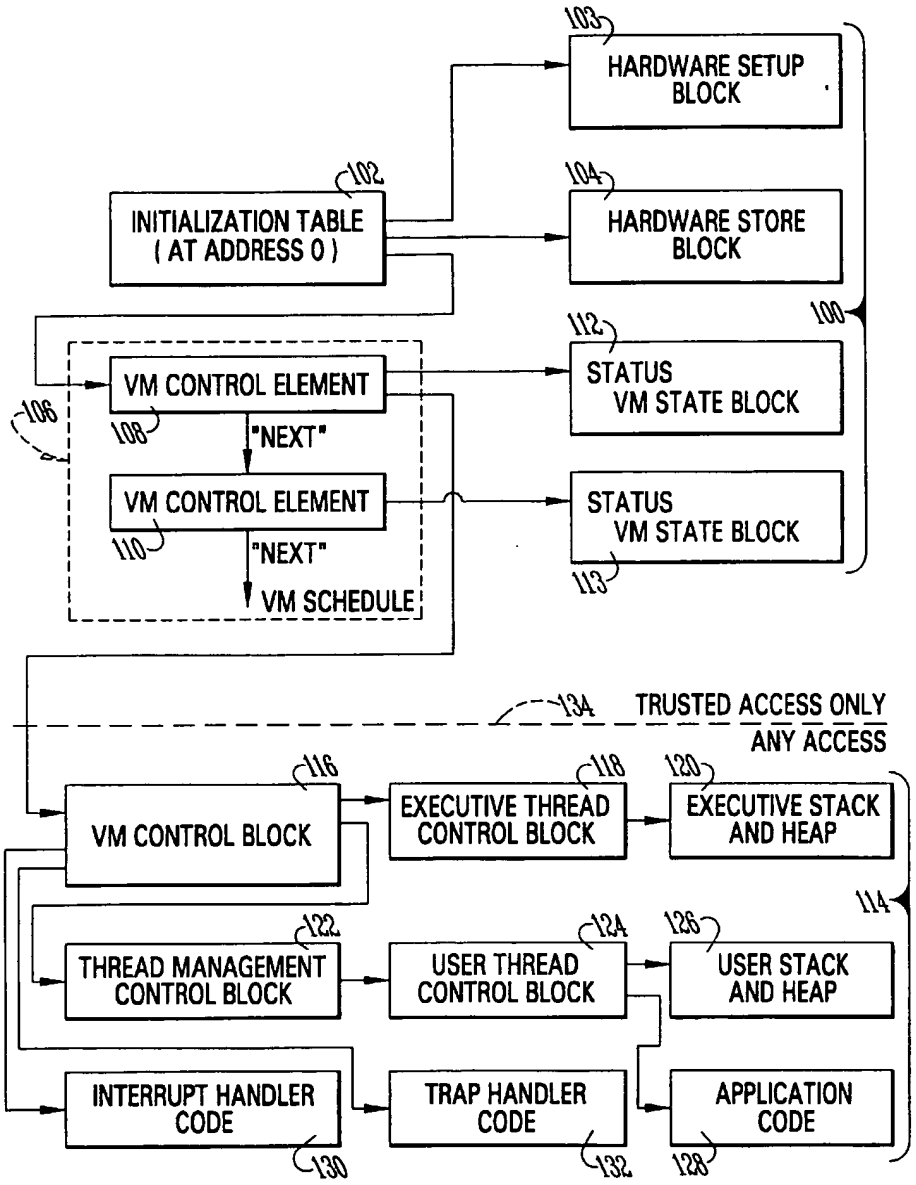
103
HARDWARE SETUP BLOCK
102
INITIALIZATION TABLE (AT ADDRESS 0)
104
HARDWARE STORE BLOCK
100
112
STATUS VM STATE BLOCK
106
VM CONTROL ELEMENT
108
"NEXT"
VM CONTROL ELEMENT
110
"NEXT"
VM SCHEDULE
STATUS VM STATE BLOCK
113
13A
TRUSTED ACCESS ONLY
ANY ACCESS
116
VM CONTROL BLOCK
118
EXECUTIVE THREAD CONTROL BLOCK
120
EXECUTIVE STACK AND HEAP
114
122
THREAD MANAGEMENT CONTROL BLOCK
12A
USER THREAD CONTROL BLOCK
126
USER STACK AND HEAP
INTERRUPT HANDLER CODE
130
TRAP HANDLER CODE
132
APPLICATION CODE
128

FIG.1

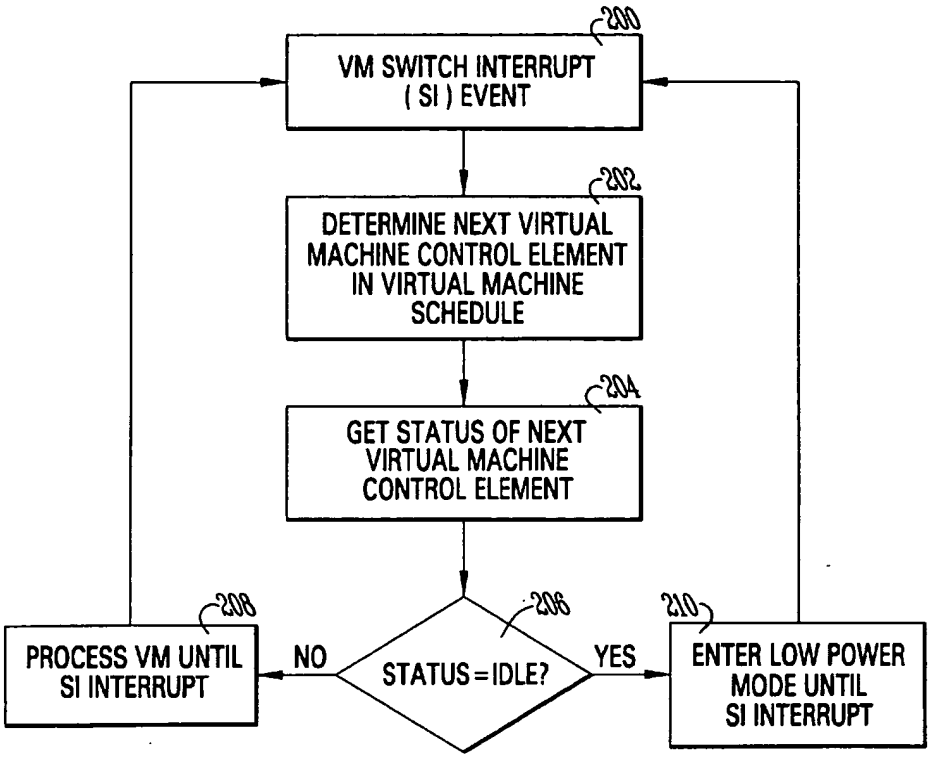
200
VM SWITCH INTERRUPT (SI) EVENT
202
DETERMINE NEXT VIRTUAL MACHINE CONTROL ELEMENT IN VIRTUAL MACHINE SCHEDULE
204
GET STATUS OF NEXT VIRTUAL MACHINE CONTROL ELEMENT
206
STATUS = IDLE?
NO
YES
208
PROCESS VM UNTIL SI INTERRUPT
210
ENTER LOW POWER MODE UNTIL SI INTERRUPT

FIG. 2

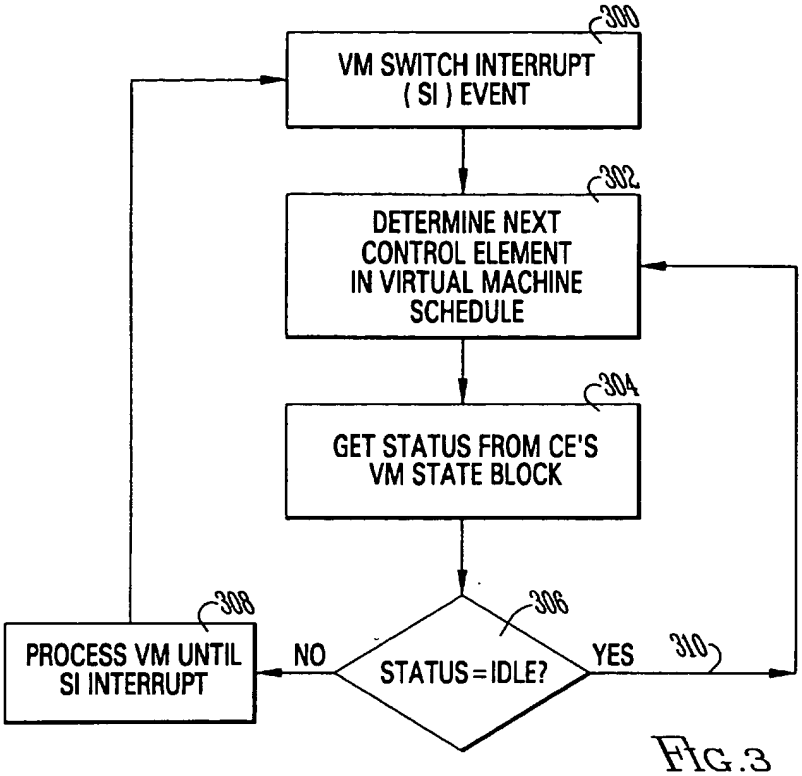
300
VM SWITCH INTERRUPT (SI) EVENT
302
DETERMINE NEXT CONTROL ELEMENT IN VIRTUAL MACHINE SCHEDULE
304
GET STATUS FROM CE'S VM STATE BLOCK
306
STATUS = IDLE?
NO
YES
308
PROCESS VM UNTIL SI INTERRUPT
310

FIG.3

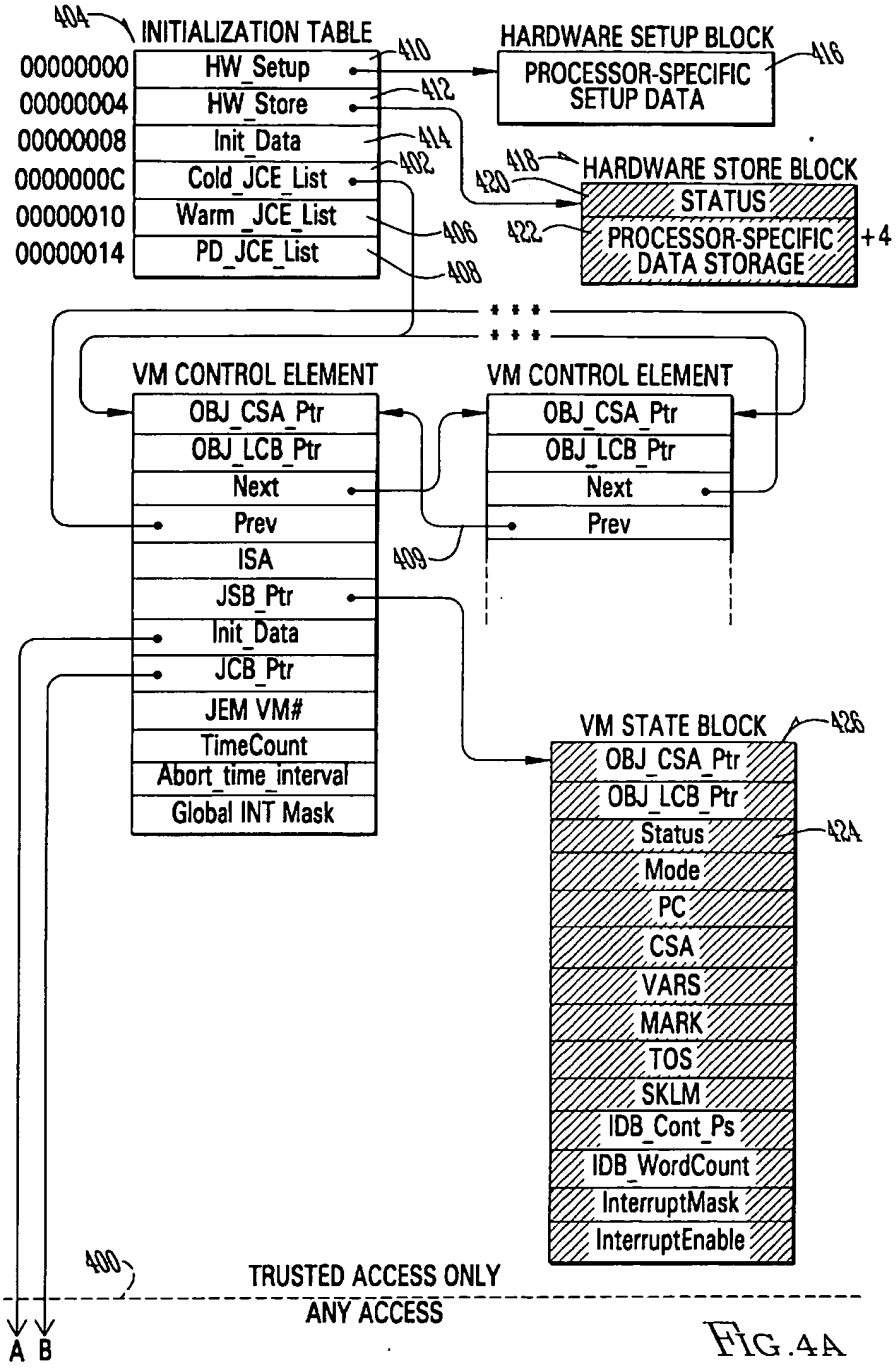

FIG.4A

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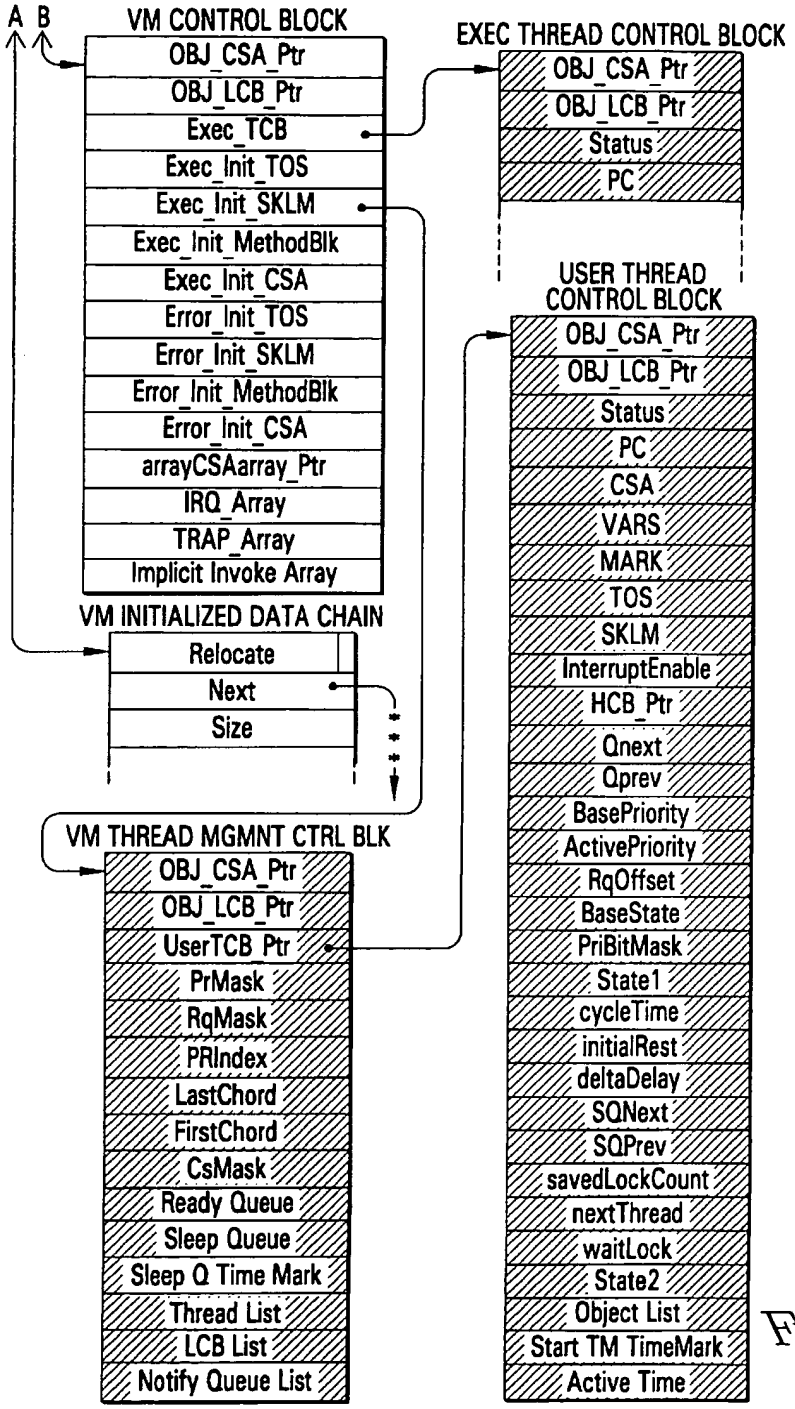
A B
VM CONTROL BLOCK
OBJ_CSA_Ptr
OBJ_LCB_Ptr
Exec_TCB
Exec_Init_TOS
Exec_Init_SKLM
Exec_Init_MethodBlk
Exec_Init_CSA
Error_Init_TOS
Error_Init_SKLM
Error_Init_MethodBlk
Error_Init_CSA
arrayCSAarray_Ptr
IRQ_Array
TRAP_Array
Implicit Invoke Array
VM INITIALIZED DATA CHAIN
Relocate
Next
Size
VM THREAD MGMNT CTRL BLK
OBJ_CSA_Ptr
OBJ_LCB_Ptr
UserTCB_Ptr
PrMask
RqMask
PRIndex
LastChord
FirstChord
CsMask
Ready Queue
Sleep Queue
Sleep Q Time Mark
Thread List
LCB List
Notify Queue List
EXEC THREAD CONTROL BLOCK
OBJ_CSA_Ptr
OBJ_LCB_Ptr
Status
PC
USER THREAD CONTROL BLOCK
OBJ_CSA_Ptr
OBJ_LCB_Ptr
Status
PC
CSA
VARS
MARK
TOS
SKLM
InterruptEnable
HCB_Ptr
Qnext
Qprev
BasePriority
ActivePriority
RqOffset
BaseState
PriBitMask
State1
cycleTime
initialRest
deltaDelay
SQNext
SQPrev
savedLockCount
nextThread
waitLock
State2
Object List
Start TM TimeMark
Active Time

FIG.4B

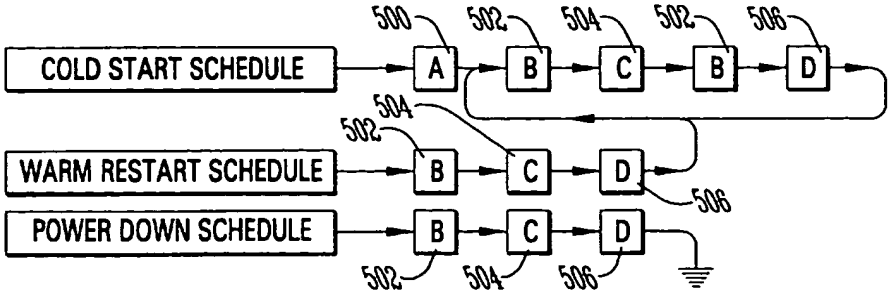

FIG.5

20040200204

10020.9ET9960

Code	Mnemonic (600)	HW_Store	JSB	Description (602)
0xFFFFFFFF	Continue	✓	✓	continue
0x0	Init	✓	✓	copy IDBs and initialize partition (initialization value)
0x1	PDEcho	✓	✓	power down interrupt received during normal execution
0x2	PDDone	✓	✓	halt instruction executed in power down handler
0x3	Initidle		✓	power down interrupt received during IDB copy
0x10	BISTFailure	✓		BIST failure
0x11	NullHWSetup	✓		null HW_Setup pointer
0x12	NullDBList	✓		null Init_Data pointer
0x13	EndofSchedule	✓		end of schedule error
0x14	CorruptDB	✓	✓	invalid Initialized Data Block (604)
0x20	NullVM		✓	VM has not been loaded (606)
0x21	Time Violation		✓	partition time limit exceeded (608)
0x22	Space Violation		✓	partition space restrictions exceeded (610)
0x23	PDError		✓	multiple power down interrupts received (612)
0x24	WSError		✓	power down handler did not complete successfully (614)
0x25	VirtualMachineError		✓	VM execution error (For ex: VM resources exhausted) (616)
0x40	MemTestFail	✓		initial memory test failure
0x4X		✓	✓	processor specific errors (618)
other		✓	✓	reserved

FIG.6

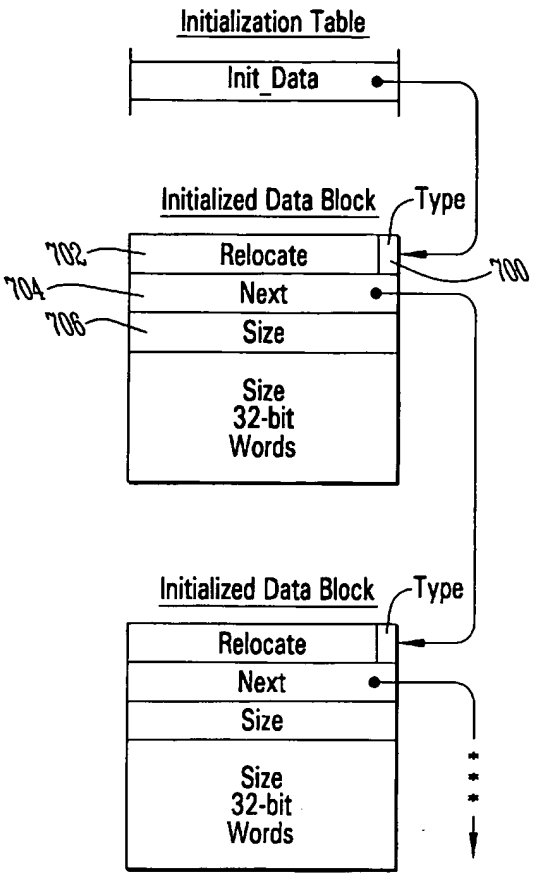
Initialization Table
Init_Data
Initialized Data Block
Type
702
Relocate
700
704
Next
706
Size
Size
32-bit
Words
Initialized Data Block
Type
Relocate
Next
Size
Size
32-bit
Words

FIG. 7